

What is claimed is:

1. A method for fabricating a surface mountable chip inductor, comprising:

5 forming a cylindrical body by mixing ferrite or ceramic powder with thermoplastic organic binder;

forming a coil pattern on a surface of the cylindrical body; and

10 transforming the cylindrical body into a square-shaped body by inserting the cylindrical body formed the coil pattern into a square-shaped mold and applying pressure to the inserted cylindrical body at a certain temperature.

2. The method of claim 1, wherein the coil pattern forming process comprises the steps of:

forming a metal layer on the surface of the cylindrical body; and

15 forming a coil pattern as a spiral shape on the metal layer.

3. The method of claim 2, wherein a material of the metal layer is one of Ag, Al, Au, Pt, Ni, Cu, Pd and Sn or metal alloy including at least one of them.

20 4. The method of claim 2, wherein the metal layer is fabricated on the surface of the cylindrical body by a dipping, a plating or a sputtering so as to have a certain thickness.

5. The method of claim 2, wherein coil pattern is fabricated by a laser process or a mechanical process.

6. The method of claim 1, wherein the coil pattern forming process comprises the steps of:

winding a thread-shaped flexible material including conductive paste on the surface of the cylindrical body; and  
hardening the conductive paste included in the flexible material.

7. The method of claim 6, wherein the thread-shaped flexible material includes a metal element by passing through a container containing conductive paste.

8. The method of claim 6, wherein the thread-shaped flexible material is a combustible material vanished in a following sintering process.

9. The method of claim 1, wherein the coil pattern forming process comprises the steps of:

winding a tape having a certain thickness and a width on the surface of the cylindrical body as a spiral shape with a certain interval;  
coating conductive paste on a distance between the wound tapes; and  
hardening the coated conductive paste.

10. The method of claim 9, wherein the tape is a combustible material vanished in a following sintering process.

11. The method of claim 1, wherein the coil pattern forming process comprises the steps of:

winding a thread-shaped flexible material free of conductive paste on the  
5 outer circumference of the cylindrical body as a spiral shape having a certain interval;

coating conductive paste on the outer circumference of the cylindrical  
body by dipping the cylindrical body in a container containing the conductive  
paste for a certain time; and

10 hardening the coated conductive paste for a certain time.

12. The method of claim 11, further comprising:  
eliminating the flexible material from the cylindrical body.

13. The method of claim 1, wherein the organic binder is a material  
15 vanished in a sintering process of the cylindrical body.

14. The method of claim 13, wherein the organic binder is one or a  
mixture of not less than two elements among PVA, PVB, polyethylene,  
20 polystyrene, polyvinylchloride and polyamide.

15. The method of claim 1, wherein the section of the square-shaped  
mold is a quadrangle.

25 16. The method of claim 1, further comprising:

forming an exterior coating layer on the cylindrical body with a mixture of ferrite or ceramic powder and thermoplastic organic binder after forming the spiral coil pattern on the surface of the cylindrical body.

5            17.    The method of claim 16, wherein the exterior coating layer forming process is performed after transforming the cylindrical body into a square-shaped body.

10           18.    The method of claim 1, further comprising:  
supplying an additional mixture around the cylindrical body inside the square-shaped mold so as to form a square-shaped body after inserting the cylindrical body into the square-shaped mold.

15           19.    The method of claim 18, wherein the additional mixture is a material same as the material used for forming the cylindrical body.

20           20.    The method of claim 1, further comprising:  
cutting the transformed square-shaped body so as to have a certain length.

25           21.    The method of claim 1, further comprising:  
sintering the transformed square-shaped body; and  
forming an outward electrode on both ends of the sintered body.

22. A method for fabricating a surface mountable chip inductor, comprising:

forming a cylindrical body by mixing ferrite or ceramic powder with thermoplastic organic binder;

5 forming a coil pattern on a surface of the cylindrical body; and

transforming the cylindrical body into a square-shaped body through a square-shaped extruder.

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